We Claim:

1. A catheter tip apparatus arranged in a catheter for the delivery and collection of an energy signal to permit energy signal analysis and/or energy signal treatment of body tissue by said energy signal, comprising:

an elongated housing having a plurality of annularly disposed elongated grooves arranged thereon; and

a flexible energy-bearing member arranged in each of said elongated grooves, each of said energy bearing members having a proximal end in communication with an energy delivery source or a signal analysis center, each of said energy bearing members having a distalmost end in communication with a beam redirector member for directing energy-analysis or energy treatment of body tissue in which said catheter is disposed.

2. The catheter tip apparatus as recited in claim 1, wherein said grooves are disposed on an external surface of said housing.

3. The catheter tip apparatus as recited in claim 1, wherein said grooves are disposed on an internal surface of said housing.

4. The catheter tip apparatus as recited in claim 1, wherein said distalmost end of said energy bearing members comprises an optical fiber with a beam redirecting arrangement thereat.

5. The catheter tip apparatus as recited in claim 1, wherein said distalmost end of said energy bearing members are directed toward an angled reflective surface.

6. The catheter tip apparatus as recited in claim 1, wherein said housing has a longitudinally directed bore arranged centrally therethrough.

7. The catheter tip apparatus as recited in claim 6, including an energy bearing member arranged within said bore of said housing.

8. The catheter tip apparatus as recited in claim 6, including an elongated guidewire arranged through said bore to permit said catheter tip apparatus to be directed within a body lumen.

9. The catheter tip apparatus as recited in claim 7, wherein said energy bearing member comprises a fiber disposed within said bore is longitudinally displaceable within said bore.

10. The catheter tip apparatus as recited in claim 1, wherein said energy bearing members comprises optical fibers, said fibers being longitudinally displaceable within said grooves in said housing.

11. The catheter tip apparatus as recited in claim 1, wherein each of said grooves have a ledge at a distal end thereof to provide an abutment to an energy bearing member disposed within said grooves.

12. The catheter tip apparatus as recited in claim 1, wherein said grooves in said housing are dissimilar in axial length.

13. The catheter tip apparatus as recited in claim 4, wherein said beam redirecting member comprises a reflective surface which comprises an annular reflective surface.

14. The catheter tip apparatus as recited in claim 13, wherein said annular reflective surface is longitudinally displaceable with respect to said distal end of said grooves.

15. The catheter tip apparatus as recited in claim 13, wherein each of said reflective surfaces are of equal arcuate width with respect to the width of each of said grooves.

16. The catheter tip apparatus as recited in claim 13, wherein each of said reflective surfaces are of larger arcuate dimension than the arcuate dimension of each of said grooves.

17. The catheter tip apparatus as recited in claim 13, wherein said beam redirecting member on at least one of said fibers comprises a ball.

18. The catheter tip apparatus as recited in claim 4, wherein said reflective surface is arranged at an angle of about 45 degrees with respect to the longitudinal axis of said fiber.

19. The catheter tip apparatus as recited in claim 1, where in said housing includes a proximal portion of reduced diameter with respect to said housing containing said grooves.

20. The catheter tip apparatus as recited in claim 4, wherein said reflective surface comprises an annular array of lensed prisms.

21. The catheter tip apparatus as recited in claim 20, wherein at least one of said annular array of prisms is in communication with at least two of said fibers.

22. The catheter tip apparatus as recited in claim13, wherein said reflective surface comprises a conical reflector disposed circumferentially adjacent said grooves.

23. The catheter tip apparatus as recited in claim 13, wherein circumferentially adjacent reflective surfaces are dissimilar to one another.

24. The catheter tip apparatus as recited in claim13, wherein said reflective surface is of arcuate configuration in the longitudinal direction.

25. A catheter tip apparatus arranged in a catheter for the delivery and collection of a light energy signal to permit analysis and/or treatment of body tissue adjacent said catheter tip apparatus by said energy signal, comprising:

an elongated housing having a longitudinal axis and a plurality of annularly disposed elongated grooves arranged thereon; and

a flexible light energy-bearing fiber arranged in each of said elongated grooves, each of said fibers having a proximal end in communication with a light energy delivery source or a light signal analysis center, each of said fibers having a distal face in spaced-apart light transmissive communication with a reflector arrangement for directing energy-analysis or energy treatment of body tissue in which said catheter is disposed, said fiber in each of said grooves comprising an annular array of axially disposed light bearing fibers.

26. The catheter tip apparatus as recited in claim 25, wherein said reflector comprises a single annular surface arranged distally adjacent said face end of each of said fibers.

27. The catheter tip apparatus as recited in claim 25, wherein said reflector comprises a discrete independent reflective surface arranged distally adjacent each face end of each of said fibers as an annular array of adjacent reflectors.

28. The catheter tip apparatus as recited in claim 25, wherein said reflector comprises a lensed prism.

29. The catheter tip apparatus as recited in claim 25, wherein said reflector comprises an annular lensed prism arranged distally adjacent said end face of each of said fibers.

30. The catheter tip apparatus as recited in claim 27, wherein adjacent reflectors in said annular array have different surface characteristics.

31. The catheter tip apparatus as recited in claim 27, wherein adjacent reflectors in said annular array are disposed at different angles with respect to said longitudinal axis of said housing.

32. The catheter tip apparatus as recited in claim 25, wherein adjacent fibers in said annular array of fibers carries different light signals from one another.

33. The catheter tip apparatus as recited in claim 25, wherein said housing has a central lumen extending therethrough, and an elongated light signal fiber is arranged therein.

34. The catheter tip apparatus as recited in claim 33, wherein said fiber arranged in said central lumen is longitudinally displaceable with respect to said probe of said elongated housing.

35. The catheter tip apparatus as recited in claim 27, wherein each of said independent reflective surfaces are disposed at differing longitudinal locations with respect to said elongated housing.

36. The catheter tip apparatus as recited in claim 25, wherein at least one of said annular array of fibers has a ball tip thereon for dispersed light transmission.

37. The catheter tip apparatus as recited in claim 25, wherein said reflector arrangement is longitudinally displaceable with respect to said face ends of said light energy bearing fibers.

38. A catheter tip apparatus arranged in a catheter for the delivery and collection of a light energy signal to permit analysis and/or treatment of body tissue adjacent said catheter tip apparatus by said energy signal, comprising:

an elongated housing having a longitudinal axis and a plurality of annularly disposed elongated grooves arranged thereon; and

a flexible light energy-bearing fiber arranged in each of said elongated grooves, each of said fibers having a proximal end in communication with a light energy delivery source or a light signal analysis center, each of said fibers having a distal face in spaced-apart light transmissive communication with said body tissue, said

fiber in each of said grooves collectively comprising an annular array of axially disposed light bearing fibers.

39. The catheter tip apparatus as recited in claim 38, wherein said light collecting fibers each have a distal end which are longitudinally spaced apart from one another.

40. The catheter tip apparatus as recited in claim 38, wherein each of said light bearing fibers are arranged to deliver and to collect light energy with respect to said tissue being analyzed.

41. The catheter tip apparatus as recited in claim 38, wherein each of said light bearing fibers has a light re-directing member in its light path.

42. The catheter tip apparatus as recited in claim 38, wherein said light bearing fibers collect a light energy beam which is wider than a light energy beam delivered to said body tissue,

43. The catheter tip arrangement as recited in claim 41, wherein said light redirectinging member may be of convex, concave, aspherical, planar, parabolic configuration for optimum light energy beam direction.